

SUBSTANCE OF INTERVIEW

Subsequent to the telephone Examiner Interviews held on 6-4-2010 and 6-23-2010 with Applicant's representative L. Alan Collins, Reg. No. 57,646, and in compliance with the requirements of MPEP §713.04 and 37 CFR §1.133(b), Applicants hereby submit a Substance of Interview.

In the 6-4-2010 Interview, the Examiner and Applicants' representative discussed **claim 1** in view of currently and previously cited art. The Examiner expressed his view that the claims were moving in a direction that seemed farther away from aspects of the invention that he felt may be patentable, and toward technology areas more crowded with art. Various disclosed features of the invention were discussed that seemed potentially unique over cited art. No particular agreement was reached, but the amendments herein generally reflect discussion during the Interview.

In the 6-23-2010 Interview, the Examiner and Applicants' representative discussed **claim 1** as amended herein in view of the art cited herein and previously-cited Irwin (US 4,978,952). The Examiner indicated that Irwin's device illuminates as a function of displaying, but does not include an illumination function distinct from the display function. Agreement was reached that **claim 1** as amended herein (including limitations that distinguish the illumination system from the display) should overcome the currently cited art and Irwin. Accordingly, a discussion regarding Irwin is provided herein below.

Applicants thank the Examiner for his comments and advice regarding the direction of the claimed invention, and for his time and assistance in both Interviews.

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Application Number: 10/559,891
Attorney Docket Number: 324007.03

REMARKS

Claims 1–3, 6, 8, 9, 11–14, and 17 are pending. Claims 1, 2, 8, 9, and 13 are amended. Claims 4, 5, 6, 10, 15, 16, 18, and 19 were previously canceled. Claims 1 and 12 are independent.

1. Rejections under 35 U.S.C. §103—Claims 1, 2, 8, 9, 12, and 13

1.1. The Examiner has rejected claims 1, 2, 8, 9, 12, and 13 under 35 U.S.C. §103(a) as being unpatentable over Sakaguchi (US 6,448,951) in view of Nauta (US 2002/0030772). Applicants respectfully traverse for at least the following reasons.

1.2. Sakaguchi discloses a display with a backlight that utilizes a single linear array of LEDs extending all the way along a Y-axis of an optical guide disposed under the display. Adjacent LEDs are turned on to illuminate a strip of the display along the X-axis via the optical guide. Thus, light from the LEDs is injected along the Y-axis and illuminates strips of the display along the X-axis (see FIGs. 4 & 15; also see the related disclosure).

1.3. Nauta discloses various methods of backlighting portions of a display based on shutters (paras [0036]–[0039] and FIGs. 1–5), electrodes (para [0040] and FIG. 6), and physical separation (para [0041]–[0043] and FIGs. 7–11).

1.4. Regarding independent claims 1 and 12, the claims are amended to include additional features based on discussion during the Examiner Interview. For discussion purposes, a reproduction of the original figure 2 of the present Application is provided below:

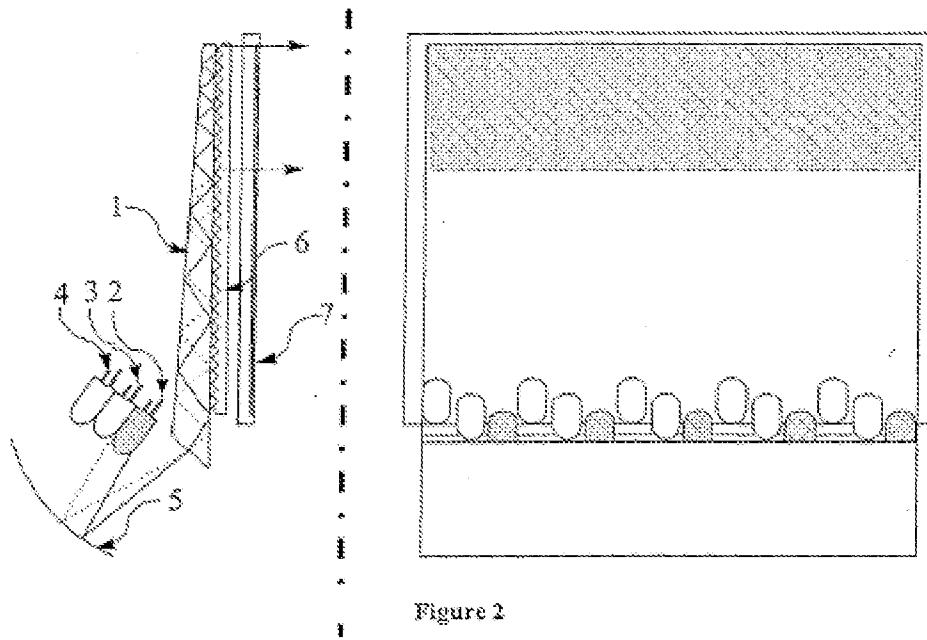


Figure 2

1.4.1. Illustrated in figure 2 is a tapered waveguide (1) positioned behind a back face of a flat-panel display (7). Also illustrated is a triangular input wedge that is part of and protruding from the thick end of waveguide (1), an input face of the triangular input wedge which is shown receiving light from light array (2) of light arrays (2), (3), and (4) reflected from mirror (5). The taper of the input face in combination with the angle of incoming light determines which portion or band of the waveguide the light will emerge from. Each light array provides light to the input face at an angle different from the others resulting in each light array illuminating a different portion or band of the display (see FIGs. 2–4 and the corresponding written description). Each light array extends

along an axis of the waveguide and display and illuminates a portion or band along the same axis.

1.5. Regarding independent **claim 1**, the claim encompasses N light arrays that each provide light that extends the width of the display, with a linear taper of an input face of a triangular input wedge of a waveguide relative to an angle of incoming light from an I^h light array configured to direct the incoming light to emerge from the waveguide over only an I^h portion of N portions of the display where the provided light is along the same axis as the N portions. But neither Sakaguchi nor Nauta suggest light sources illuminating portions of a display where both the light source and the illuminated portions of a display extend along the same axis, and where the portion of the display illuminated is determined by a linear taper of an input face relative to an angle of incoming light from the light source.

1.5.1. Accordingly, Sakaguchi and Nauta, considered separately and in combination, fail to disclose or suggest:

1.5.2. “a plurality of N light arrays wherein each light array is configured to provide light that is substantially co-extensive with the back face of the display along the X-axis”; and

1.5.3. “a linear taper of the input face of the triangular input wedge that, in combination with an angle relative to the input wedge of incoming light from an I^h light array of the plurality of N light arrays, is configured to direct the incoming light from the I^h light array to emerge from a face of the slab waveguide over only an I^h portion of N portions of the back face of the display, wherein each of the N portions is substantially co-extensive with the back face of the display along the X-axis, and wherein each of the

N portions are a different portion of the back face of the display than any other of the N portions”, as recited in **claim 1**.

1.5.4. Therefore, Applicants respectfully traverse and request that the Examiner withdraw the rejection.

1.6. Regarding independent **claim 12**, the claims recites features similar to those recited in **claim 1** and is likewise allowable for at least the same reasons discussed in connection with **claim 1**. In particular, Sakaguchi and Nauta, considered separately and in combination, fail to disclose or suggest:

1.6.1. “wherein each light array of the plurality of N light arrays provides light that is substantially co-extensive with the back face of the display along the X-axis”; and

1.6.2. “wherein a linear taper of the input face of the input linear wedge, in combination with an angle relative to the input wedge of the I^{th} light array of the plurality of N light arrays, directs incoming light from the I^{th} light array to emerge from a face of the slab waveguide over only an I^{th} portion of N portions of the back face of the display, and wherein each of the N portions of the back face of the display is substantially co-extensive with the back face of the display along the X-axis, and wherein each of the N portions of the back face of the display are a different portion of the back face of the display than any other of the N portions of the back face of the display”, as recited in **claim 12**.

1.6.3. Therefore, Applicants respectfully traverse and request that the Examiner withdraw the rejection.

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1.7. Regarding **claims 2, 8, 9, and 13**, these claims depend variously from allowable claims 1 and 12 and are therefore likewise allowable for at least the same reasons. Therefore, Applicants respectfully traverse and request that the Examiner withdraw the rejection.

2. Rejections under 35 U.S.C. §103—Claims 3 and 14

2.1. The Examiner has rejected **claims 3 and 14** under 35 U.S.C. §103(a) as being unpatentable over Sakaguchi in view of Nauta and Wang (US 6,704,071). Applicants respectfully traverse and submit that Wang fails to overcome the deficiencies of Sakaguchi and Nauta with respect to **claims 1 and 12**, from which **claims 3 and 14** variously depend. Accordingly, **claims 3 and 14** are allowable over Sakaguchi, Nauta, and Wang for at least the same reasons discussed herein above with respect to **claims 1 and 12**. Therefore, Applicants respectfully traverse and request that the Examiner withdraw the rejection.

3. Rejections under 35 U.S.C. §103—Claims 6, 11, and 17

3.1. The Examiner has rejected **claims 6, 11, and 17** under 35 U.S.C. §103(a) as being unpatentable over Sakaguchi in view of Nauta and Higuchi (US 5,887,964). Applicants respectfully traverse and submit that Higuchi fails to overcome the deficiencies of Sakaguchi and Nauta with respect to **claims 1 and 12**, from which **claims 6, 11, and 17** variously depend. Accordingly, **claims 6, 11, and 17** are allowable over Sakaguchi, Nauta, and Higuchi for at least the same reasons discussed herein above with respect to

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claims 1 and 12. Therefore, Applicants respectfully traverse and request that the Examiner withdraw the rejection.

4. Previously-Cited Art

4.1. Regarding previously-cited Irwin (US 4,978,952), Irwin discloses a “video display having a shutter assembly with apertures, optical guides extending behind the assembly and a group of different light sources channeling their light into each of the optical guides, respectively. … Electronic control circuitry is provided to control the light outputs with a video input signal in relation to a horizontal sweep signal and to selectively make the shutter apertures transparent so as to expose a portion of the illuminated collimators in response to a vertical sweep signal. The intensity of the light source is varied to produce a high resolution, high speed video display” (Abstract). Thus Irwin’s light sources provide both the illumination and the display via horizontal scanning like a conventional cathode ray tube.

4.1.1. Irwin therefore discloses a self-illuminating display device that is intended to be used as a display (col. 4, lines 20–24). The claimed invention, on the other hand, recites an illuminating method and system for a display “wherein the display is a liquid crystal flat-panel display” (see **claims 1 and 12**). Any attempt to modify Irwin for use as an illuminator for an LCD display or the like would render it unsatisfactory for its indeed purpose, at least because *its intended purpose is to be a display*, not an *illuminator for another display*. Accordingly, there is no suggestion or motivation to modify Irwin’s display for use in an illumination method or system for an LCD display (MPEP 2143.01(V)).

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4.1.2. Further, repurposing Irwin for use as an LCD display illuminator would require a change the principle of operation of Irwin's display. In particular, Irwin's light sources are controlled to produce a display image by actuating the light sources in sequence, as in a conventional CRT display, to provide a horizontal sweep of the display based on video chromatic input signals that also serves to vary the intensity of the light sources over the sweep (col. 3, lines 7–20). But modifying Irwin to perform the function of an illuminator for an LCD display would require changing the principle of operation of Irwin at least because horizontal sweep sequencing and intensity varying would have to be eliminated—a change in the basic principle under which Irwin's was designed to operate (MPEP 2143.01(VI)).

4.1.3. Accordingly, Irwin in combination with the other cited art is not sufficient to render the claims *prima facie* obvious.

5. Support for Claim Amendments

5.1. Support for the claim amendments can be found in the original specification at least on page 4, line 25–pg. 6, line 5. Therefore, the amendments do not constitute new matter.

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CONCLUSION

Accordingly, in view of the above Amendments and Remarks it is submitted that the claims are patentably distinct over any cited art and that all the rejections to the claims have been overcome. Based on the foregoing, Applicants respectfully request that the pending claims be allowed, and that a timely Notice of Allowance be issued in this case. If the Examiner believes, after this Amendment, that the Application is not in condition for allowance, the Examiner is requested to call the Applicants' representative at the telephone number listed below.

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If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time.

Respectfully submitted,
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Date: 6-26-2010

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